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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO.
90/005,710	04/24/2000	5846435	RE-US5846435	4507

Mr Richard Haase
4402 Ring Rose Drive
Missouri City, TX 77459

EXAMINER

ART UNIT

PAPER NUMBER

२१

DATE MAILED: 05/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

[illegible]

PTO COPY

Office Action Summary

Application No.

09/733,392

Applicant(s)

HAASE, RICHARD ALAN

Examiner

Chester T. Barry

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-16, 19, 20, 22, 24-41, 44-48, 51-55, 58-61 and 67-71 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-16, 19, 20, 22, 24-41, 44-48, 51-55, 58-61 and 67 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☒ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: 08/555244

Housekeeping

Applicant was instructed to file two copies of each response with the Office. That he has not done with the October 30, 2002, response. The Office photocopied the single copy filed. One copy was placed in the reexam file. The other was filed in the reissue file. Please review again the Decision, *sua sponte*, to Merge Reexamination and Reissue Proceedings mailed March 21, 2001.

§112, 1st paragraph, written description

Claims 1 – 8, 10 – 16, 19 – 20, 22, 24 – 40, 41, 44 – 48, 51 – 55, 58 – 61, 67 – 71 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In response to the Office action mailed 8/30/2002 in which at least claim 1 was rejected on several grounds substantially related to patentability, namely, 35 U.S.C. § 112, second paragraph,¹ and 35 U.S.C. § 103(a),² applicant narrowed Claim 1 by requiring that the sludge to be treated by the claimed invention must have been previously digested by a “thermophilic digestion process” operated at a specified minimum temperature. Specifically, the narrowing amendment limits the sludge that is to be dewatered by the claimed dewatering method to sludges that had been digested by a “thermophilic digestion process at a temperature greater than about 115°F.”

Applicant argues that support for this amendment can be found at col 2 line 9 of the patent.

The relied-upon portion of the patent's disclosure constitutes what then-applicant Haase denoted as a "Description of the Prior Art." The entire paragraph containing the relied upon-portion is reproduced in full herein. Indentations and numeric identifiers have been added to aid in the examiner's discussion thereof.

1. Although there are different approaches to controlling pathogens in sewage sludge, each method relies on altering the sludge environment so that it becomes a less effective medium of microbial growth.
2. At temperatures of at least about 115°F, active bacteria are of the thermophilic variety.
3. Aerobic thermophilic microorganisms are used to carry out any required degradation in a thermophilic, exothermic process.
4. The thermophilic digestion system relies on high operating temperatures (greater than about 55°C or 131°F) to achieve a substantial pathogen destruction.
5. While a fraction of the energy released from the thermophilic process is stored intracellularly to form new cells, a larger fraction of the energy is released as heat into the environment.
6. The released heat is the major heat source used to achieve the desired operating temperature.
7. Experiments have shown that between about 8,500 and 13,000 BTU are released with the thermophilic digestion of one pound of volatile solids (bacteria).
8. By maintaining a sufficient temperature for a required period of time, pathogenic organisms are reduced to below detectable levels.

¹ Office action, 8/30/2002, at page 12.

² Office action, 8/30/2002, at pages 13, 17, 20, 21.

The statement upon which applicant relies for §112, first, written description support for the recited temperature limitation corresponds to statement no. 2.

It is clear that the invention of original patent claim 1 relates to a method of conditioning and dewatering sludge which had previously been digested by a prior art "thermophilic digestion process" the subject matter of which was itself not the subject of the patent claims. That is, the invention claimed in original patent claim 1 begins where the prior art "thermophilic digestion process" ends: With sludge digested by a "thermophilic digestion process." As the eight numbered statement above make convincingly clear, while "thermophilic bacteria" may have been defined or categorized as those which are active at temperatures 115°F or higher (see statement no. 2), that - according to then applicant Haase - was not the temperature range at which the prior art "thermophilic digestion process" was conducted. As statement no. 4 clearly points out, the **process** of digesting sludge using thermophilic bacteria **relied** on operating temperatures greater than about 131°F to achieve substantial pathogen destruction. That is, the significance of the "115°F" temperature relates to description of a variety of bacteria whereas the much higher 131 °F relates to the process which produces the sludge that is conditioned by the claimed invention. For emphasis, statement no. 4 is reproduced herein:

The thermophilic digestion system relies on high operating temperatures (greater than about 55°C or 131°F) to achieve a substantial pathogen destruction.

The foregoing reasons apply equally as well with respect to claims 15, 22, 33, 41, 48, 55, and 67, each of which recites the same "115°F" limitation, and claims dependent thereon.

Applicant does not argue that the "8500 . . . BTU" figure in statement no. 7 reasonably conveys to the skilled artisan that applicant was in possession of a dewatering method which conditioned sludge previously digested at a temperature as low as 115°F. Further, there is no support on this record of any correspondence between the 8500 BTU figure and the 115°F temperature.

In short, the skilled artisan would have appreciated that applicant was indeed in possession of the knowledge that bacteria of the "thermophilic variety" are those defined as being active above about 115°F. Further, the skilled artisan would have appreciated that applicant was in possession of conditioning sludge which had been digested by a thermophilic digestion process conducted at or above about 131 °F. But the skilled artisan would not have appreciated that applicant was in possession of conditioning sludge which had been digested by a thermophilic digestion process conducted at about 115°F or higher.

Non-elected claims

Applicant's cancellation of claims 62 – 66 is noted with appreciation.

37 CFR 1.121(b)(2)

The objection to claim 4 under 37 CFR 1.121(b)(2) is withdrawn in light of applicant's response.

Claim 15 is objected to under 37 CFR 1.121(b)(2) for want of the added limitation "at a temperature greater than about 115°F" to be underlined and for want of the deleted text "according to claim 1" to be shown in brackets.

§112, first paragraph, §251, and §132

The rejection of claims 23, 42, 49, 50, 56, 57 based on "not adding / free of colloidal material" is withdrawn in light of applicant's response.

The rejection of claim 41 based on "acrylamide" is withdrawn in light of applicant's response.

The rejection of claims 42, 43, 49 based on "anionic colloidal material" is withdrawn in light of applicant's response.

The rejection of claim 50 based on "microflocs, polyquat, and polyacrylamide" is withdrawn in light of applicant's response.

The rejection of claims 28, 32, 37, 40, 46, 53, 60 based on polymer dosage, solids, and thermophiles is withdrawn in light of applicant's response.

The rejection of claims 22, 24 - 32 under §112, first paragraph, written description, and objection thereto under §251 and §132, is maintained for the reasons of record (pages 7 and 8 of the previous Office action), substantially for the reasons

given there. Applicant agrees that the passage at col 5 lines 52-57 describes the method one invention, but argues that this description does not limit the scope of the method one invention. Rather, applicant argues, it is a description of but one embodiment of the method one invention.

This argument has been carefully considered, but it is not persuasive. This is not a case in which the application describes the method one invention as "including" the step of adding a cationic polyacrylamide once the microflocs of sludge have formed.

Rather, the original disclosure states that the method one invention "involves" adding a cationic polyacrylamide once the microflocs of sludge have formed. That is, the method one invention is in fact **defined** (in part) by this time-ordered and specific sequence of events. If a process did not require that the polyacrylamide be **added after** the microflocs had been formed by the prior addition of polyquaternary amine, it would appear that it would be a different method, but not method "one."

§112, first paragraph, lack of enablement

The rejection of claim 50 based on "microflocs, polyquat, and polyacrylamide" is withdrawn in light of applicant's response.

§112, second paragraph

Claims 2, 26, 30, 44, 51 and (36, 39, 58, 68)³ are rejected under 35 USC §112, second paragraph, as failing to particularly point out and distinctly claim the subject matter for which patent protection is sought. The statement and discussion of the rejection as it applies to "DADMAC compounds" or "DADMAC . . . family" from pages 9 and 10 of the last action is incorporated herein.

The rejection of claim 3 is withdrawn insofar as applicant's responsive amendment overcomes the "epi-DMA"-related grounds for rejection.

As for DADMAC, applicant argues that di-allyl di-methyl ammonium chloride is not a single compound, but rather a family of compounds of various carbon chain lengths of the "allyl" group.

Applicant's response to this rejection is unpersuasive. Applicant did not cite a chemical dictionary, text, article, or treatise to support his interpretation of "allyl" as a group containing a carbon chain or various lengths. Applicant did not specify at least two specific compounds belonging to the alleged genus of DADMAC compounds.

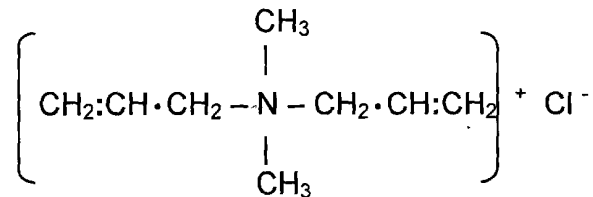
As shown by a noted chemical dictionary,⁴ the term "allyl" means the radical (or "group") 2-propenyl. That is, the group



³ Although not explicitly listed along with claims 2, 26, and 30 in the statement of the rejection in the previous action, applicant was on fair notice that claims 44, 51 and 36, 39, 58, 68 were rejected on these DADMAC grounds. The examiner specifically addressed the "DADMAC compounds" aspect of specifically rejected claim 26. DADMAC "compounds" was discussed with respect to claims 44 and 51. The same or substantially the same offending language, "selected from the group consisting of di-allyl di-methyl ammonium chloride (DADMAC) compounds" (emphasis added here), appears in claims 36, 39, 58, and 68 as well. Therefore, this rejection including claims 36, 39, 58, and 68 may be made final. In re Kronig, 190 USPQ 425 (CCPA 1976)

⁴ Grant & Hackh's Chemical Dictionary, 5th ed., McGraw Hill Book Co. (1987), at pages 25-26.

Accordingly, DADMAC describes the specific compound shown herein:



Should applicant pursue the reversal of this ground of rejection, it is suggested that applicant produce evidence demonstrating at least some recognition in the art that "allyl" - as recited in "di-allyl di-methyl ammonium chloride" - encompasses more than the group 2-propenyl, or that DADMAC is a generic term covering more than the compound structure shown immediately above.

Claim 4 is rejected under §112, 2nd paragraph, as failing to particularly point out and distinctly claim the subject matter for which patent protection is sought. In substance, step (a) of Claim 4 recites:

- a) adding a polymeric quaternary ammonium compound, as primary component, to the biological sludge, wherein the polymeric quaternary ammonium compound is added directly to the sludge **and**, upon formation of microflocs of the sludge from the polymeric quaternary ammonium compound; and
- b) adding a polyacrylamide . . . [etc.]

Step (a) cannot be understood. It is unclear what happens "upon formation of microflocs" after having been introduced by the word "and" (emphasized above). The claim reads like a fictional TV murder mystery abruptly interrupted by a power failure 5

minutes before conclusion of the story, as silence befalls the detective's trailing voice with "... and the murderer is none other than ..." (*blink*).

The rejection of method claim 19 based on its dependence from a composition claim is withdrawn in light of applicant's response.

Claim 16 is rejected under 35 U.S.C. §112, 2nd parag., as failing to particularly point out and distinctly claim the subject matter for which patent protection is sought. Claim 16 reads, in pertinent part, "wherein the polyacrylamide and polymeric quaternary ammonium compound is used in solution or in dry form." Claim 16 is unclear whether only the polymeric quaternary ammonium compound must be used in either solution form or in dry form, or whether both the polyacrylamide and polymeric quaternary ammonium compound must be used in either solution form or in dry form. It is suggested that "is" be changed to "are."

The rejection of claim 23 based on "between the contacting" is withdrawn in light of applicant's response.

The rejection of claims 43, 45, 47, and 52 based on various antecedence problems (at pages 11-12 of last Office action) are withdrawn in light of applicant's response.

The rejection of various claims under §112, second paragraph, based on the use of the terms thermophiles and thermophilic (at pages 12 – 13) is withdrawn in light of applicant's response, but see also the rejection of various claims under §112, first paragraph, written description.

§103 rejections

Claims 1, 3 – 8, 10-16, 19-20, 22, 24-41, 44-48, 51-55, 58-61, 67-71 are rejected under §103 over Dentel, Gould, and Buckman for the reasons given in the previous Office action (at pages 13-16).

Applicant argues that Dental "teaches away" from the HDTMA / polyacrylamide embodiment. All the more reason, sayeth the examiner now, for the skilled artisan to have followed Gould's teaching, motivation, and suggestion to substitute the conditioning compounds recited in the presently claimed invention for the unsatisfactory combination taught by Dentel. Applicant's argument would have been more persuasive in overcoming the rejection had the examiner taken the position that it would have been obvious to have substituted Dentel's HDTMA / polyacrylamide for Gould's conditioning chemicals. But, of course, that was not the examiner's position at all. Dentel's pointing out the perceived deficiencies in the HDTMA / polyacrylamide conditioning system simply further urges the skilled artisan to seek better conditioning systems, such as those betterments offered by Gould.

Even if improved results (Response, 10/30/02, page 30 note 2) were adequately supported by a 37 CFR 1.132 declaration, the results reported in the application and the

Response would not be probative of nonobviousness because they are not unexpected, as shown by Gould and / or Buckman.

Applicant's limited remarks notwithstanding extensive citations to Gould's teachings do not adequately explain how Gould allegedly teaches away from the **claimed** invention.

Claim 2 is rejected under §103 over Dentel, Gould, Buckman and either Rosencrance or Hurlock for the reasons given in the previous Office action (at page 16).

Furthermore, with respect to Hurlock, note that Hurlock's application 08/573924 was filed before applicant's application was filed. That fact makes Hurlock clearly and indisputably available under §102(e). Applicant's response is left to applicant's discretion. To date, applicant has not filed a 37 CFR 1.131 declaration.

It is unclear what Applicant's argument is with respect to Rosencrance. That is, the Examiner agrees applicant's filing date intervenes the filing of the applied Rosencrance patent and the parent application to which it claims the benefit under §120. Applicant does not argue that Rosencrance is not prior art. That fact weighs heavily in the examiner's mind and in his decision to repeat Rosencrance in the alternative. Applicant argues that Rosencrance may be prior art, and maybe it is not.

Applicant's arguments do not convincingly show that a prima facie case of obviousness has not been made with respect to claim 2. The examiner is of the view that a prima facie case has been made. The examiner is unaware of any statute or PTO rule requiring a showing by the examiner that a patent document is entitled to the

benefit of an earlier filing date. Rosencrance's entitlement to the benefit of the parent's filing date is not at issue in this proceeding. If applicant wishes to produce evidence that Rosencrance SN 08/555244 does **not** support the teachings in Rosencrance upon which the examiner relies in part, then he is free to do so and to have that evidence considered.

It is unlikely – nor would it serve the public interest - that a rejection should be withdrawn in light of if's and maybe's.

Chitikela rejections

Claims 1, 2, 4, 7, 16, 22, 24 - 32 are rejected under 35 USC 103(a) over Chitakela in view of Chung for the reasons beginning at page 17 of the last Office action.

Claim 14 is rejected under 35 USC 103(a) over Chitakela in view of Chung, as set forth above, further in view of USP 4329428 to GHOSH, for the reasons at page 20 of the last Office action.

Claims 1 – 4, 7, 16, 22, 24 - 32 are rejected under 35 USC 103(a) over Chitakela in view of USP 5451326 to Carlson, for the reasons at pages 20-21 of the last Office action.

Claim 14 is rejected under 35 USC 103(a) over Chitakela and USP 5451326 to Carlson, as applied above, further in view of USP 4329428 to Ghosh, for the reasons at page 21 of the last Office action.

Claims 1 – 6, 7, 16, 22, 24 - 32 are rejected under 35 USC 103(a) over Chitakela in view of USP 5035808 to Hassick or USP 4450092 to Huang, for the reasons at pages 21 – 23 of the last Office action.

Claim 14 is rejected under 35 USC 103(a) over either Chitakela and Hassick or Chitakela and Huang, as applied above, further in view of Ghosh '428, for the reasons at page 23 of the last Office action.

Claims 15, 19, 33 – 40 are rejected under 35 USC 103(a) as being obvious over Chitakela in view of USP 4250269 to Buckman, for the reasons at pages 23 – 25 of the last Office action.

Response to Arguments related to Chitakela-based rejections

The examiner's position is that there is "substantial evidence" that the reference became a "printed publication" as of August 21, 1996. Most obviously, the document itself bears a date of August 21, 1996. Further, the copyright date does not contradict this evidence for the document was copyrighted in the same year as August 21, 1996. Applicant implies, hints, and suggests that the Chitakela reference was not published on

August 21, 1996, but applicant produces no proof tending to support those inferences. Applicant's "questions" what the applicant characterizes as the examiner's "assumption" with respect to the publication date of the reference. Applicant's burden is not to raise a reasonable doubt in the mind of the examiner as to the availability of a given document as prior art. The examiner has met his burden if there is substantial evidence that the claimed invention is not patentable. The examiner has discharged that duty in these rejections based on Chitikela for there is substantial evidence that Chitikela was published not later than Aug. 21, 1996.

Applicant's remarks have been carefully considered, but are not persuasive on the question of whether a prima facie case of obviousness as set forth by the various combinations of applied references. The fact that Chitikela does not recommend the ferric chloride or HDTMA is further evidence of motivation to adopt the suggested improvements of the other references.

Similarly, applicant's allegations of unexpected result, even if filed in declaration form, are unpersuasive of non-obviousness because the art leads the person having ordinary skill in this art to expect the results purportedly achieved by applicant.

References A – H are cited of interest.

FINAL ACTION

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Respectfully,

A handwritten signature in black ink, appearing to read 'Chester T Barry', is written over a horizontal line.

Chester T Barry
Primary Examiner
United States Patent & Trademark Office
703-306-5921

3/13/03
5/9/03 rev. 1